

THE TYPIFICATION OF *CALOPHYLLUM CALABA* L.

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In the prologue of *Calophyllum Calaba* L., Spec. Pl. ed. i (1753) 514 LINNAEUS gave a number of references which show that the species included at least three elements or syntypes: (1) a Ceylon element, (2) a Malabar element and (3) an American element. The American element was described and figured by PLUMIER under the Caribbean name *Calaba* (PLUM., Gen., 39 t. 18), and references to PLUMIER'S plant are found in pre-1753 works of LINNAEUS, namely in Fl. Zeyl. (1747) 90, no. 202, and in ROYEN, Fl. Leyd. Prodr. (1740) 476, both cited in the prologue of *C. Calaba* L. In addition a reference to PLUMIER'S *Calaba* was made by LINNAEUS in his Gen. Pl. ed. v (1754) 229 and ed. vi (1764) 266, works having an important bearing on the interpretation of the genera published in LINN., Sp. Pl. ed. i (1753) and ed. ii (1763) (Art. 20). The particulars given in the prologue concerning the habitat of the species includes also the West Indies, for the habitat is stated to be "in Indiis", a phrase frequently employed by LINNAEUS to indicate that a plant occurs in the East as well as in the West Indies.

In view of this inclusion of the American element in the prologue of *C. Calaba* and in view of the facts:—that LINNAEUS adopted the American vernacular name as the scientific epithet of the species; that the treatment given by LINNAEUS in Gen. Pl. eds. v & vi included the American element as a syntype of the genus *Calophyllum*; and that *C. Calaba* was the only species of the genus as published in 1753 to include an American element, it is not surprising that botanists in general should typify *C. Calaba* on the American syntype and make this species as the lectotype of the genus.

I have not been able to consult the treatment given to the different syntypes of the species by WILLDENOW, who in his Spec. Pl. (1800) 1160 suspected the Asiatic elements to be different from the American one, and who is reported to have later published *C. apetalum* Willd. (Mag. Ber. 1811, p. 79) for an Asiatic element of *C. Calaba*. In the absence of the original description of *C. apetalum*, it is impossible to decide which of the Asiatic elements from *C. Calaba* was included in *C. apetalum*; and the subsequent reports are somewhat contradictory. However it is quite certain that A. DE CANDOLLE (Prodr. I, 1824, pp. 562–563) reserved the binomial *C. Calaba* exclusively for the Caribbean element, and published *C. spurium* Choisy. *ex* DC. to include *C. apetalum* Willd. and at least the Malabar element of *C. Calaba*.

Owing, however, to the contradictory typification of *C. apetalum* and *C. spurium*, some having typified them on the Malabar syntype and others on the Ceylon one, these two binomials have been generally disregarded and later ones are in use, namely, *C. decipiens* Wight (= *C. Wightianum* Wall.) for the Malabar element, and *C. Burmannii* Wight for the Ceylon element.

This exclusion of the Asiatic elements from *C. Calaba* was so generally adopted that, at the Cambridge Botanical Congress (1930), the British Botanists proposed that the genus *Calophyllum* L. (1753) should be typified on *C. Calaba* L. *quoad* the American element. According to a decision of the 1935 Botanical Congress, Amsterdam, this proposal should be followed unless there are grave reasons for adopting another type; and so far no serious reasons have been brought forward for disregarding the type proposed by the British Botanists.

It is true that there have been a few opponents to this general typification of *C. Calaba*. One of the first to select a lectotype of *C. Calaba* from the Asiatic elements was LAMARCK (Encycl. I, 1783, p. 553) who typified *C. Calaba* on the Malabar element quoted as Tsjerou-ponna, RHEEDE, Malab. 4, p. 81, t. 39, in the prologue of the species, interpreting at the same time *C. inophyllum* L. in a wide sense to include not only the Ceylon and the American elements of *C. Calaba*, but also a new one from Madagascar later named as *C. Tacamahaca* Willd. (1811). Had it not been for the fact that the genus *Calophyllum* has to be interpreted on *C. Calaba* L. *quoad* the American element (included also in LINN., Gen. Pl. eds. v & vi) on the recommendations by the 1930-1935 Botanical Congresses, a very strong case could have been made in favour of this Lamarckian typification of the species; for RHEEDE's plate of Tsjerou-ponna is quoted directly in the prologue of *C. Calaba* as well as in two out of the three additional references given in the prologue, while there is an indirect reference to this plate also in the third citation.

To my knowledge TRIMEN (Journ. Linn. Soc., Lond., XXIV, 1887, p. 143) was the first to assert that the Ceylon element alone should be considered in typifying *C. Calaba*. TRIMEN was then working on HERMANN's herbarium in the British Museum, London, and had typified, correctly as *C. Burmannii* Wight, HERMANN's specimen cited by LINNAEUS under *C. Calaba*; but, apparently not realising that other elements were also included in the prologue of *C. Calaba*, TRIMEN remarked as follows:—

"The name *C. Calaba* has been generally abandoned for this Eastern species to which it originally belongs, in consequence of JACQUIN having figured in 1763 (Hist. Select. Stirp. Amer. t. 165)

as LINNAEUS'S species the Martinique plant, to which PLUMIER first gave the generic name *Calaba*, taken from the Caribbee name. LINNAEUS (Sp. Plant. ed. ii, p. 732) accepted JACQUIN'S determination, and hence makes his own species to include both the E. and W.—Indian plants. The name should not be maintained for either."

This view of TRIMEN ignores the Malabar and the American elements from the prologue of *C. Calaba* L. (1753) and therefore cannot be accepted. Yet RENDLE and FAWCETT (Fl. Jamaica V, 1926, p. 200) supported TRIMEN'S views by creating the name *C. Jacquinii* for the American element of *C. Calaba* and by remarking as follows:—

"*C. Calaba* L. Sp. Pl. 514 (1753) is founded on a Ceylon plant (Fl. Zeyl. no. 202) named later *C. Burmannii* Wight (III. i, 128, 1838) a different species from the West Indian plant described by JACQUIN under the same name. In Sp. Pl. ed. ii, 732, LINNAEUS added the reference to JACQUIN."

The logical development to these erroneous assumptions of TRIMEN and of RENDLE and FAWCETT concerning the syntypes of *C. Calaba* L. (1753) culminated when ALSTON in his Suppl. to TRIMEN, Fl. Ceyl. (1931, p. 22) adopted *C. Calaba* L. as the correct name for the Ceylon plant with *C. Burmannii* Wight as its synonym. In this treatment of the Ceylon plant, ALSTON has been followed by VAN OOTSTROOM (Blumea, Suppl. I, 1937, p. 196), and by ABEYESANDERE and ROSAYRO (Descript. Check-List Ceyl. 1939, p. 34), despite the fact that this treatment, based as it is on erroneous assumptions, renders it impossible to typify *Calophyllum* L. (1753–1754) on the American element as recommended by the 1930 and the 1935 Botanical Congresses.

In view of the foregoing considerations I submit that *C. Calaba* L. should be accepted as the correct name for the American element named as *C. Jacquinii* by RENDLE and FAWCETT, and its use for any of the Asiatic elements should be rejected as illegal. The nomenclatural treatment proposed here is also in accordance with the procedure which, in my opinion, should be followed in order to secure stabilisation in the nomenclature of plants (FURTADO in Gard. Bull. Straits Settl. IX, 1937, pp. 244–249 and 296–299). Under more recent interpretations of the rule of *nomina ambigua* (Art. 62) it would be possible to demand the rejection of the binomial *C. Calaba* L. as an impriorable name on the grounds that its use in different senses has become a source of confusion; but such a demand has been argued by me to be contrary to the very fundamentals of the Nomenclatural Rules (FURTADO in Gard. Bull. Straits Settl. XI, 1939, pp. 7 and 28).